

COMMONWEALTH OF VIRGINIA



Information Technology Resource Management Policy

TECHNOLOGY MANAGEMENT

Virginia Information Technologies Agency

Preface

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Commonwealth of Virginia (COV) Information
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Subject

Technology Management

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One (1) year from the effective date, then every two
years thereafter.

Authority

Code of Virginia, §2.2-2007;
(Powers and duties of the CIO)

Code of Virginia, §2.2-2010;
(Powers and duties of the Virginia Information
Technologies Agency; "VITA")

Code of Virginia, §2.2-2017
(Powers and duties of the VITA-Division of Project
Management)

Code of Virginia, §2.2-2014
(Submission of information technology plans by state
agencies and public institutions of higher education;
designation of technology resource.)

Code of Virginia, §2.2-2015
(Authority of CIO to modify or suspend major
information technology projects; project termination)

Code of Virginia, §2.2-2018; §2.2-2019; §2.2-2020;
§2.2-2021

(Project planning approval; Project development
approval; Procurement approval for major information
technology projects; Project oversight)

Code of Virginia, §2.2-2457; §2.2-2458;
(Powers and duties of the Information Technology
Investment Board; the "Board")

Code of Virginia § 2.2-2651
(Powers and duties of the Council on Technology
Services)

Scope

This policy is applicable to all Executive Branch State
agencies and institutions of higher education (hereinafter
collectively referred to as "agencies") that are
responsible for the management, development, purchase
and use of information technology investments in the
Commonwealth of Virginia. Local government entities
are encouraged to consider the implications of this policy
for their work.

Purpose

To establish a comprehensive and uniform policy for the
management of technology investments in the
Commonwealth of Virginia (COV).

General Responsibilities (Italics indicate Code of Virginia requirements)

The Information Technology Investment Board (the "Board")

The Information Technology Investment Board is
assigned the following general technology management
responsibilities:

- *Appoint the Chief Information Officer as the chief
administrative officer of the Board to oversee the
operation of VITA pursuant to § 2.2-2005;*

- *Approve or disapprove the development of all major information technology projects as defined in § 2.2-2006. The Board may terminate any major information technology project recommended for termination by the Chief Information Officer pursuant to § 2.2-2015;*
- *Approve strategies, standards, and priorities recommended by the Chief Information Officer for the use of information technology for state agencies in the executive branch of state government;*
- *Approve the four-year plan for information technology projects;*
- *Approve statewide technical and data standards for information technology and related systems;*
- *Approve statewide information technology architecture and related set of system standards;*
- *Approve criteria for the review and approval of the planning, scheduling and tracking of major information technology projects as defined in § 2.2-2006;*
- *Adopt resolutions or regulations conferring upon the Chief Information Officer all such powers, authorities and duties as the Board deems necessary or proper to carry out the purposes of Chapter 20 of Title 2.2; and*
- *Submit by September 1 of each year a list of recommended technology investment projects and priorities for funding such projects to the Governor and the General Assembly.*

Chief Information Officer (CIO)

The Chief Information Officer is assigned the following general technology management responsibilities:

- *Monitor trends and advances in information technology; develop a comprehensive, statewide, four-year strategic plan for information technology to include specific projects that implement the plan; and plan for the acquisition, management, and use of information technology by state agencies. The statewide plan shall be updated annually and submitted to the Board for approval. In developing and updating the plan, the CIO shall consider the advice and recommendations of the Council on Technology Services created pursuant to § 2.2-2651.*
- *Direct the formulation and promulgation of policies, guidelines, standards, and specifications for the purchase, development, and maintenance of information technology for state agencies, including, but not limited to, those (i) required to support state and local government exchange, acquisition, storage, use, sharing, and distribution of geographic or base map data and related technologies, (ii) concerned with the development of electronic transactions including the use of electronic signatures as provided in § 59.1-496, and (iii) necessary to support a unified approach to information technology across the totality of state government, thereby assuring that the citizens and businesses of the Commonwealth receive the greatest possible security, value, and convenience from investments made in technology.*
- *Direct the development of policies and procedures, in consultation with the Department of Planning and Budget, that are integrated into the Commonwealth's strategic planning and performance budgeting processes, and that state agencies and public institutions of higher education shall follow in developing information technology plans and technology-related budget requests. Such policies and procedures shall require consideration of the contribution of current and proposed technology expenditures to the support of agency and institution priority functional activities, as well as current and future operating expenses, and shall be utilized by all state agencies and public institutions of higher education in preparing budget requests.*
- *Review budget requests for information technology from state agencies and public institutions of higher education and recommend budget priorities to the Information Technology Investment Board.*
- *This review shall include, but not be limited to, all data processing or other related projects for amounts exceeding \$100,000 in which the agency or institution has entered into or plans to enter into a contract, agreement or other financing agreement or such other arrangement that requires that the Commonwealth either pay for the contract by foregoing revenue collections, or allows or assigns to another party the collection on behalf of or for the Commonwealth any fees, charges, or other assessments or revenues to pay for the project. For each project, the agency or institution shall provide the CIO (i) a summary of the terms, (ii) the anticipated duration, and (iii) the cost or charges to any user, whether a state agency or institution or other party not directly a party to the project arrangements. The description shall also include any terms or conditions that bind the Commonwealth or restrict the Commonwealth's operations and the methods of procurement employed to reach such terms.*
- *Direct the development of policies and procedures for the effective management of information technology investments throughout their entire life-cycles, including, but not limited to, project definition, procurement, development, implementation, operation, performance evaluation, and enhancement or retirement. Such policies and*

procedures shall include, at a minimum, the periodic review by the CIO of agency and public institution of higher education information technology projects estimated to cost \$1 million or more or deemed to be mission-critical or of statewide application by the CIO.

- *Report annually to the Governor and the Joint Commission on Technology and Science created pursuant to § 30-85 on the use and application of information technology by state agencies and public institutions of higher education to increase economic efficiency, citizen convenience, and public access to state government.*
- *Direct the development of policies and procedures that require VITA to review information technology projects proposed by state agencies and institutions exceeding \$100,000, and recommend whether such projects be approved or disapproved. The CIO shall disapprove projects between \$100,000 and \$1 million that do not conform to the statewide information plan or to the individual plans of state agencies or institutions of higher education*

Virginia Information Technologies Agency (VITA)

The Virginia Information Technologies Agency is assigned the following general technology management responsibilities:

- *Prescribe regulations necessary or incidental to the performance of duties or execution of powers conferred under this chapter.*
- *Plan and forecast future needs for information technology and conduct studies and surveys of organizational structures and best management practices of information technology systems and procedures.*
- *Assist state agencies and public institutions of higher education in the development of information management plans and the preparation of budget requests for information technology that are consistent with the policies and procedures developed pursuant to § 2.2-2007.*
- *Develop and adopt policies, standards, and guidelines for managing information technology by state agencies and institutions.*
- *Develop and adopt policies, standards, and guidelines for the procurement of information technology and telecommunications goods and services of every description for state agencies.*
- *Direct the establishment of statewide standards for the efficient exchange of electronic information and technology, including infrastructure, between the public and private sectors in the Commonwealth.*

- *Direct the compilation and maintenance of an inventory of information technology, including, but not limited to, personnel, facilities, equipment, goods, and contracts for services.*
- *Develop statewide technical and data standards for information technology and related systems to promote efficiency and uniformity.*
- *Evaluate the needs of agencies in the Commonwealth with regard to (i) a consistent, reliable, and secure information technology infrastructure, (ii) existing capabilities with regard to building and supporting that infrastructure, and (iii) recommended approaches to ensure the future development, maintenance, and financing of an information technology infrastructure befitting the needs of state agencies and the service level requirements of its citizens.*

The Project Management Division (PMD) of VITA

The Division of Project Management is assigned the following general technology management responsibilities:

- *Implement the approval process for information technology projects developed in accordance with § 2.2-2008;*
- *Assist the CIO in the development and implementation of a project management methodology to be used in the development of and implementation of information technology projects in accordance with this article;*
- *Provide ongoing assistance and support to state agencies and public institutions of higher education in the development of information technology projects;*
- *Establish a program providing cost-effective training to agency project managers;*
- *Review information management and information technology plans submitted by agencies and public institutions of higher education and recommend to the CIO the approval of such plans and any amendments thereto;*
- *Monitor the implementation of information management and information technology plans and periodically report its findings to the CIO;*
- *Assign project management specialists to review and recommend information technology proposals based on criteria developed by the Division based on the (i) degree to which the project is consistent with the Commonwealth's overall strategic plan; (ii)*

technical feasibility of the project; (iii) benefits to the Commonwealth of the project, including customer service improvements; (iv) risks associated with the project; (v) continued funding requirements; and (vi) past performance by the agency on other projects; and

- *Provide oversight for state agency information technology projects.*

Executive Branch Secretaries

Executive Branch Secretaries are assigned the following general technology management responsibilities:

- Review information management plans (IT Strategic Plans) submitted by agencies and institutions of higher education within the Secretariat.
- Make appropriate recommendations to the CIO regarding COV enterprise technology programs and projects, throughout the program or project life-cycle, which includes program or project initiation, planning, execution, closeout, and operations and support.
- Review agency major IT projects and make appropriate recommendations to the CIO, throughout the project life-cycle, which includes the project initiation, planning, execution, closeout, and operations and support phases.

Executive Branch State Agencies

- State Agencies are assigned the following general technology management responsibilities:
- *The head of each state agency shall designate an existing employee to be the agency's information technology resource who shall be responsible for compliance with the procedures, policies, and guidelines established by the CIO.*
- *All state agencies and public institutions of higher education shall prepare and submit information technology plans to the CIO for review and approval. All state agencies and public institutions of higher education shall maintain current information technology plans that have been approved by the CIO.*
- *Prior to proceeding with any major information technology project, an agency shall submit to the Division (PMD) a project proposal, outlining the business need for the project, the proposed technology solution, if known, and an explanation of how the project would support the agency's business objectives and the Commonwealth's information technology plan. The project management specialist may require the submission*

of additional information if needed to adequately review any such proposal.

- *Upon approval of the CIO of the project plan, an agency shall submit to the Division (PMD) a project development proposal containing (i) a detailed business case including a cost-benefit analysis; (ii) a business process analysis, if applicable; (iii) system requirements, if known; (iv) a proposed development plan and project management structure; and (v) a proposed resource or funding plan. The project management specialist may require the submission of additional information necessary to meet the criteria developed by the Division (PMD).*
- *Upon approval of the Board of the project development proposal involving a major information technology project that requires the procurement of goods or services, the agency shall submit a copy of any Invitation for Bid (IFB) or Request for Proposal (RFP) to the Division (PMD). The project management specialist shall review the IFB or RFP and recommend its approval or rejection to the CIO. The CIO shall have the final authority to approve the IFB or RFP prior to its release and shall approve the proposed contract for the award of the project.*
- *Whenever an agency has received approval from the Board to proceed with the development and acquisition of a major information technology project, the CIO shall establish an internal agency oversight committee. The internal agency oversight committee shall provide ongoing oversight for the project and have the authority to approve or reject any changes in the project's scope, schedule, or budget. The CIO shall ensure that the project has in place adequate project management and oversight structures for addressing major issues that could affect the project's scope, schedule, or budget and shall address issues that cannot be resolved by the internal agency oversight committee.*
- *Whenever a statewide or multiagency project has received approval from the Board, the primary project oversight shall be conducted by a committee composed of representatives from agencies impacted by the project, which shall be established by the CIO.*
- As part of the Agency IT Strategic Planning process, each agency will develop, manage, and maintain an Agency Technology Portfolio. Agencies will use the Agency Technology Portfolio to support technology investment decisions, including the identification of all major technology procurements and projects to be incorporated in the Agency IT Strategic Plan. Agencies are required to utilize Information Technology Investment Management (ITIM) based practices in their IT

strategic planning efforts. Agency Technology Portfolios will be updated at least annually, and as needed, to ensure the portfolio accurately reflects current and planned agency technology investments.

- Comply with the policies, standards, and guidelines for the management of information technology resources in the Commonwealth.
- Plan and manage agency IT projects, throughout the project life-cycle, which includes the project initiation, planning, execution, closeout, and operations and support phases.
- Propose the initiation of major IT projects to the CIO. Manage approved major IT projects, throughout the project life-cycle, which includes project initiation, planning, execution, closeout, and operations and support phases.
- *On an annual basis, each agency must report to the CIO and the director of Planning and Budget performance measurement information for technology projects. The information shall include, but not be limited to, the degree to which projects were completed on time and within budget. The performance reporting will be based on guidance issued by the CIO and the Department of Planning and Budget.*

Council on Technology Services (COTS)

The Council on Technology Services is assigned the following general technology management responsibility:

- *The purpose of the Council shall be to advise Chief Information Officer on the services provided by the Virginia Information Technologies Agency and the development and use of applications in state agencies and public institutions of higher education.*
- ***Related COV ITRM Policies, Standards, and Guidelines***
- IT Strategic Planning & Portfolio Management Standard (To be published)
- Model Standard for Maintenance & Enhancement Projects (91-5)
- Model Standard for Large Scope Projects (91-3)
- Model Standard for Small Scope Projects (91-4)
- Project Management Standard (To be published)
- Technology Management Glossary (COV ITRM Standard GOV2003-02.1)

- Portfolio Management Guideline (To be published)
- Project Management Guideline (COV ITRM Guideline GOV2003-02.2)

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Section 1: Introduction

Background

The COV ITRM Technology Management Policy GOV 2002-02.1 establishes a comprehensive and uniform policy for the management of technology investments in the Commonwealth of Virginia. This policy is applicable to all State agencies and institutions of higher education (hereinafter collectively referred to as “agencies”) that are responsible for the management, development, purchase and use of information technology investments in the Commonwealth of Virginia. Derived from relevant research and “best practices” in both the public and private sectors, the policy has been approved by the Commonwealth Chief Information Officer (CIO) and the Commonwealth Information Technology Investment Board (ITIB). Complete implementation of the policy will include development and rollout of supporting standards, guidelines, and tools for managing information technology at state agencies. Local governments, while not bound by the CTM policy, are encouraged to follow the general technology management processes described in the policy and provide feedback related to local government technology management issues.

Frequently Used Terms and Definitions

The following frequently used terms and definitions are essential to understanding Commonwealth Technology Management. Other definitions, related to technology management, appear within the body of this policy. A complete glossary of technology management terms used by the Commonwealth of Virginia is available on-line at the Virginia Information Technologies Agency (VITA) Website, <http://www.vita.virginia.gov>.

Asset - Component of a business process and can include computer rooms, networks, digital and paper records, hardware, software, people, etc.

The **Common Requirements Vision (CRV)** is the document that presents the business case for the Commonwealth Enterprise Architecture (EA) Initiative and represents the initial step in the evolution of the EA process model. The CRV establishes the agreements reached between business and IT leaders regarding: the most significant, influencing trends on the enterprise; the enterprise business strategies that will drive the EA; the information required by the business decision makers to satisfy the enterprise business strategies; implications for application portfolio development; and the requirements for the technical architecture.

A **Commonwealth Project** is defined as a temporary endeavor, undertaken by a Commonwealth executive branch agency (or agencies), to deliver a unique product or service. Commonwealth projects are expected to follow project management best practices and comply with project management requirements identified in the *Code of Virginia*, Governor’s Executive Orders, and COV ITRM policies, standards, and guidelines.

Commonwealth Asset Management (CAM) is defined as the process of planning, procuring, deploying, operating, maintaining, upgrading, and disposing of assets to achieve maximum return on investment over the life-cycle of the asset, in support of both Commonwealth and agency IT strategic plans.

Commonwealth Project Management (CPM) is defined as the application of knowledge, skills, tools, and techniques to meet or exceed stakeholder needs and expectations from a Commonwealth Project.

Commonwealth Technology Management (CTM) is the application of information technology investment management (ITIM) principles and practices in support of the business activities of state government.

An **Enterprise** is an organization with common or unifying business interests. An enterprise may be defined at the Commonwealth level, the Secretariat level, or agency level for programs and projects requiring either vertical or horizontal integration within the Commonwealth, Secretariat, or agency, or between multiple Secretariats, agencies, and/or localities.

Enterprise Architecture (EA) is a method or framework for developing, implementing, and revising business-focused Information Technology (IT) guidance. The resulting guidance describes how the enterprise can best use technology and proven practices to improve the way it does business. In the Commonwealth, EA is built on the business needs of state and local government agencies. EA is described in a series of documents that showcase the development and revision process, the involved parties, and the resulting guidance. The Commonwealth EA relies on a governance model (roles and responsibilities), business and technical inputs, and knowledge of how agencies presently do business to develop explicit policies, standards, and guidelines for information technology use.

An **Enterprise Technology Program** is a group of related IT projects, aggregated for management purposes that support a defined enterprise.

Enterprise Program Management (EPM) is an Information Technology Investment Management-based methodology to manage programs and projects of enterprise significance. EPM focuses on the management of multiple related programs and projects that individually support the same mission or ongoing activity.

Information Technology Infrastructure Library (ITIL) is a publication developed by the Central Computer and Telecommunications Agency (CCTA) of the Office of Government Commerce (OGC) of the United Kingdom which document best practices and a comprehensive process model for IT service management.

Information Technology Investment Management (ITIM) is an integrated approach to managing IT investments that provides for the continuous identification, selection, control, life-cycle management, and evaluation of IT investments. ITIM uses structured

processes to minimize risks and maximize return on IT investments. ITIM is the basis for the Commonwealth's approach to technology management. The primary sources of ITIM best practices referenced in the Commonwealth Technology Management policy include the U.S. General Accounting Office, META Group, Inc., Gartner, Inc., other states (Washington), and other Federal Agencies (NIH, DoD.).

Technology Portfolio Management is a management process used to select, control, and evaluate investments within and across asset and project portfolios. The primary focus of IT portfolio management is to ensure alignment between business goals and IT investments.

An **IT Strategic Plan** is a document that aligns IT strategy and investments with organizational business priorities, goals, and objectives.

IT Strategic Planning (ITSP) is an ITIM-based planning methodology that looks at IT resources and projects as capital investments and forms a foundation for the selection, control, and evaluation of IT resources and projects as part of a business-driven technology portfolio.

A **Technology Portfolio** is a repository of essential information about technology investments, structured to facilitate the evaluation of investment alternatives in support of an overall strategic business plan.

Section 2: CTM Guiding Principles

The guiding principles for Commonwealth Technology Management are to:

Invest in technology to improve service to customers and, ultimately, to the citizens of Virginia.

Technology within the Commonwealth is a means not an end. Technology investments must be aligned with critical business needs in order to provide the best possible service to Commonwealth constituents (customers and citizens). Justification for technology investments must clearly demonstrate business value. Anticipated benefits should be clearly identified and continuously assessed throughout the life-cycle of technology projects to ensure the desired business value is achieved.

Achieve excellence in the performance of all technology services.

Recognizing that technology is pervasive throughout all aspects of constituent service delivery and across all levels of government, effective and efficient use of technology resources is of major importance to the Commonwealth. Standard processes for technology management must be clearly defined, repeatable, and adaptable to ensure that technology investments and projects deliver the best product or service, on time and within budget. Of equal importance, the

Commonwealth technology workforce must strive for excellence in the delivery of services, courteously, efficiently and promptly, to all constituents.

Exercise sound financial management of, and accountability for, technology investments.

Technology represents a significant investment of Commonwealth resources. Competent and capable management of technology investments is, therefore, a required discipline to be exercised by all agencies within the Commonwealth. A common approach to technology management is needed to ensure responsible and accountable stewardship over technology investments.

Section 3: CTM Governance

Legislation enacted in 2003 restructured information technology in the Commonwealth, ushering in comprehensive reform of state government information technology. The legislation created a new Commonwealth Technology Management governance structure for planning and development of IT projects and the purchasing of IT equipment and services. CTM is governed by a ten member IT Investment Board comprised of the Secretary of Technology, the Auditor of Public Accounts and appointees by the Governor and the Joint Rules Committee of the legislature. The Board is charged with setting technology strategy and with reviewing and prioritizing enterprise-wide technology investments across state government. The Board also approves priorities, policies, standards, Major IT Project development or termination, and the four-year statewide plan for technology.

The legislation also created a single new state agency, the Virginia Information Technologies Agency (VITA), and a CIO position, appointed by the Board, to oversee the planning and development of all IT projects in the Commonwealth and the purchasing of IT equipment and services. The CIO serves as VITA's chief administrative officer and oversees the operation of VITA. Other responsibilities of the CIO include developing policies, standards and procedures for technology and project management, and approval and oversight of IT projects and procurements. VITA is responsible for managing the Commonwealth technology infrastructure, conducting technology procurements, and consolidating all state agency technology infrastructure staff into VITA, in accordance with targeted dates established in legislation. Appendix A provides a graphical view of the CTM IT Governance Structure. (Reference Appendix A.)

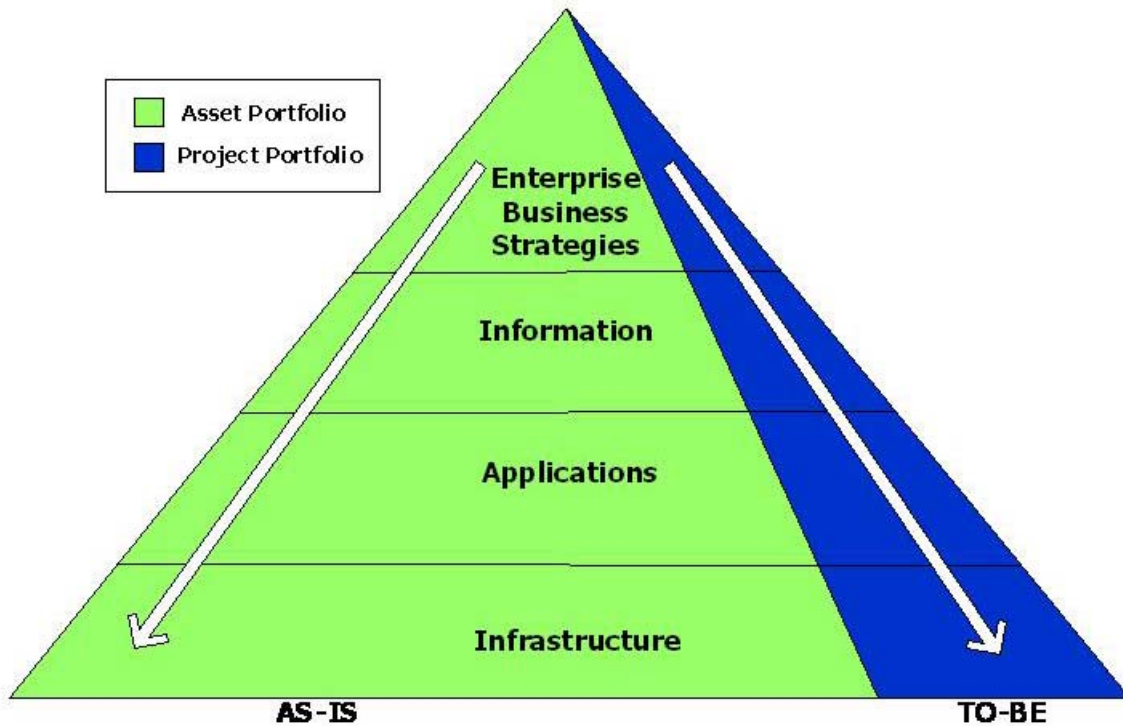
Section 4: CTM Approach and Objectives

The CIO, under the direction of the ITIB and with the assistance of VITA, must direct the development of policies and procedures for the effective management of information technology investments throughout their life-cycle. The CTM Policy defines the Commonwealth of Virginia approach for managing information technology investments, using IT portfolio management tools, throughout the life-cycle of technology assets and projects.

CTM is based on the concept that technology investments in the Commonwealth support the business of state government. Agency strategic planning articulates the agency mission and business activities, and provides an agency vision for the future. The agency strategic (business) plan is the basis for IT investment decisions. The selection, control, and evaluation of technology investments are based upon the anticipated business value of the investment. Technology investments should be prioritized and executed based on the benefit to be derived towards achieving agency strategic goals and objectives, and addressing agency critical business issues or needs that best support the agency mission and business activities.

Agency business leaders must play an integral part in the initiation of any technology investment, defining the business need and the anticipated outcomes to be achieved. Involvement by the business leadership of the agency should continue throughout the life-cycle of any technology investment, continually validating that the investment is on track to deliver the desired business value. A critical aspect of CTM is the early and continuous involvement of agency leadership in technology investment decision-making and in providing effective oversight as investment decisions are made.

The CTM approach for technology management is based on the principles of ITIM for selecting, controlling, and evaluating IT investments and incorporates ITIM “best practices” from both the private and public sector. The Commonwealth ITIM process utilizes a Commonwealth Technology Portfolio as the repository for technology investments, comprised of a project portfolio and an asset portfolio. The Commonwealth Technology Portfolio is an aggregated view of individual agency projects and assets supporting Commonwealth and agency “Enterprise Business Strategies”. The technology portfolio documents the current “As-Is” technology architecture and facilitates selection of technology investments for the migration to the “To-Be” technology architecture. The selection of technology investments, and migration to the “To-Be”, begins with a comprehensive analysis of the current technology portfolio (“As-Is” technology architecture), and an evaluation of the ability of the current technology portfolio to meet the strategic goals and objectives, and/or address agency critical business issues or needs that best support the agency mission and business activities of the Commonwealth or agency. The evaluation typically takes the form of a gap analysis of the “As-Is” to the “To-Be” and results in the identification of projects and procurements necessary to move the organization to the “To-Be” state. The technology portfolio is represented graphically below.



IT Strategic Planning is the process of building and maintaining the technology portfolio. Commonwealth business and technology leaders must continuously select, control, and evaluate technology investments, projects, and assets, throughout their life-cycle. As the portfolio changes, it should be evaluated to ensure that the "As Is" and "To Be" states are accurately represented. Moreover, continuous analysis should be performed to assure the "As Is" and identified projects and future procurements are aligned to meet changing strategic goals and objectives, and/or address critical business issues or needs of the Commonwealth and agency. The IT Investment Management (ITIM) process relies on analysis of the technology portfolio for both assets and projects, as well as the interdependence of activities resulting from portfolio analysis and execution of portfolio management activities (Reference Appendix B.)

The objectives of CTM include:

- Establishing a methodology for the selection, control, and evaluation of IT investments to support the business needs of the Commonwealth;
- Providing a framework for the migration from the current enterprise architecture to the desired future enterprise architecture;

Defining life-cycle processes to ensure that technology projects deliver business value on time and within budget;

- Defining life-cycle processes to ensure assets are managed to support required service levels with maximum return on investment and benefit to the Commonwealth.

Section 5: CTM Integrated ITIM Processes

Commonwealth Technology Management is comprised of five major integrated ITIM processes:

- IT Strategic Planning;
- Enterprise Program Management;
- Commonwealth Project Management;
- Commonwealth Asset Management; and
- Continuous ITIM Evaluation.

CTM components provide a framework for the selection, control, and evaluation of technology investments throughout their life-cycle. (Reference Appendix B.)

Through the IT Strategic Planning process, Commonwealth agencies select IT investments that best support identified agency business needs and Commonwealth enterprise business and technology strategies.

Enterprise Program Management, Commonwealth Project Management, and Commonwealth Asset Management are the control processes for ITIM-based technology management. Enterprise Program Management provides the control for programs, through oversight and coordination, necessary to ensure the ITIM competencies of participating agencies. Commonwealth Project Management provides control for projects to ensure competent and capable project management is applied to all IT projects to achieve business success. Commonwealth Asset Management provides control for assets to ensure assets are managed throughout their useful life to maximize value to the enterprise.

ITIM Evaluation is a continuous process that compares actual results against planned measures of success. The ITIM Evaluation process establishes the business value achieved and the actual return on the investment. Lessons learned from the evaluation process also provide feedback for future selection and control activities.

The CIO, on behalf of the ITIB, develops and maintains tools to support CTM, including: a Technology Portfolio, a Commonwealth Agency Technology Strategic Planning Application (CATSPA), and a Commonwealth Major IT Project Status Report (“Dashboard”) system. CTM tools will be available on-line and incorporate the principles established within the CTM policy. Appropriate standards, guidelines, and necessary training will accompany the rollout of CTM tools as required for implementation of CTM within the Commonwealth.

Appendices C-F provide graphical representations (process flow charts) of CTM processes over the life-cycle of technology investment planning and project management. The charts also identify associated decision points and management team responsibilities during each phase of the project life-cycle.

Section 6: IT Strategic Planning/Technology Portfolio Management

IT Strategic Planning is a systematic method used by an organization to set broad direction and specific goals for managing information and supporting delivery of IT services to customers. The CTM IT Strategic Planning process is an ITIM-based IT strategic planning methodology that looks at IT projects and assets as long-term investments and forms the foundation for selecting, controlling, and evaluating technology investments as part of a business-driven technology portfolio.

IT strategic planning is performed at various levels of government within the Commonwealth, including development of: a Commonwealth of Virginia Strategic Plan for Technology by the CIO; Enterprise Technology Program Plans as directed by the CIO; and individual Agency IT Strategic Plans.

In the Commonwealth, agency IT strategic planning is completed on a biennial cycle, tied to the budget biennium, with updates occurring at least annually. The Commonwealth of Virginia Strategic Plan for Technology and the COV Enterprise Architecture serve as standing guidance for enterprise technology program plans and for agency IT strategic planning.

COV IT Strategic Planning

The CIO, as specified in the *Code of Virginia*, monitors trends and advances in information technology and develops a comprehensive, statewide, four-year strategic plan for information technology. The Commonwealth of Virginia Strategic Plan for Technology includes specific projects that implement the plan, and plan for the acquisition, management, and use of information technology by state agencies.

To develop the COV Strategic Plan for Technology, the Governor and the ITIB provide imperatives to guide the strategic planning effort. The COV Strategic Plan for Technology provides a blueprint by which technology assets will be marshaled by the CIO to achieve the imperatives. The CIO, in consultation with the ITIB, identifies guiding principles to provide a sound framework for developing and implementing the strategic plan. Key stakeholders, including executive branch agencies, boards and commissions, and the technology business community contribute to the strategic plan, providing data and input through the development process. Based on the Commonwealth vision for technology, the Commonwealth Strategic Plan for Technology is approved by the ITIB, and identifies significant initiatives (projects and procurements) selected as priority technology investments. VITA and other state agencies are directed to implement the strategic plan. VITA is charged with monitoring the implementation of the Commonwealth Strategic Plan for Technology and providing periodic status reports. The statewide plan is updated annually and submitted by the CIO to the ITIB for approval.

Enterprise Technology Program Plans

In addition to a Commonwealth of Virginia Strategic Plan for Technology, the CIO may designate and develop Enterprise Technology Program Plans, as needed, to support programs of enterprise significance.

Agency IT Strategic Planning

Each executive branch agency within the Commonwealth will develop and maintain an Agency IT Strategic Plan. The agency IT strategic planning process should include both business and technology managers within the agency. Agency IT Strategic Plans will be published biennially, in conjunction with the Commonwealth biennial budget process, and will include planned IT investments for a minimum of two years. VITA will assist state agencies and public institutions of higher education in the development of information management plans that are consistent with the policies and procedures.

The Agency IT Strategic Plan will be used by agencies to align agency technology investments and budget with Commonwealth technology initiatives and with agency organizational priorities, goals, and objectives. Agency IT Strategic Plans typically include a technology vision statement, a description of the agency's business goals and objectives, and IT projects and procurements the agency plans to use to achieve its business goals and objectives or to address agency critical issues. The Agency IT Strategic Plan also includes an update to the technology portfolio to reflect a current description of the agency's technology assets. Institutions of higher education are exempt from the update to the technology portfolio to reflect asset information.

The CIO will develop and disseminate planning guidelines to provide specific directions to agencies regarding IT Strategic Planning submission requirements. Appendix C describes the IT Strategic Planning process within the Commonwealth. Appendix D describes the two-year, full planning cycle of the Agency IT Strategic Planning process including the plan development, evaluation, approval, publication, and modification or amendment.

As part of the Agency IT Strategic Planning process, each agency will update their individual agency assets contained in the Commonwealth Technology Portfolio. Agencies will use the Commonwealth Technology Portfolio to support technology investment decisions including, the identification of technology assets, and all major technology projects and procurements to be incorporated in the Agency IT Strategic Plan. Agencies are required to utilize ITIM-based practices in their IT strategic planning efforts, including clearly defined selection criteria, business case development, risk assessment methodologies, and prioritization schema.

The Agency Strategic Plan, the Commonwealth of Virginia Strategic Plan for Technology, Enterprise Architecture standards, and Enterprise Technology Program Plans, will serve as the basis for the development of Agency IT Strategic Plans and corresponding IT budgets. The Agency IT budget will reflect the technology investments required to support agency business initiatives. Specific IT budget requests will be developed based on guidelines issued by the CIO and the Department of Planning and Budget.

Plan Evaluation

Agencies must submit an IT Strategic Plan, through their proponent Secretary, to the CIO. VITA's Project Management Division (PMD), on behalf of the CIO, will review all Agency IT Strategic Plans submitted by agencies and public institutions of higher education. The review will encompass completeness, adherence to planning guidelines, and compatibility with the

Commonwealth of Virginia Strategic Plan for Technology and Enterprise Architecture standards. Based upon the plan reviews, the PMD will provide an approval recommendation to the CIO. The PMD, in conjunction with Cabinet Secretaries, will review Agency IT Strategic Plans to identify and recommend to the CIO projects that could provide business value to the Commonwealth as a COV enterprise technology project or as collaboration opportunities within or across Secretariats.

Plan Approval

The Agency Head must certify and approve the Agency IT Strategic Plan before submission to the CIO. The CIO will approve or disapprove all Agency IT Strategic Plans. An approved IT Strategic Plan must be maintained on file with VITA. Approved plans will establish a reference for VITA to validate agency technology investments, including planned projects and procurements. The PMD will work with agencies to revise and resubmit plans that are disapproved by the CIO.

Change Management

Agencies are required to provide updates to their Agency IT Strategic Plan and Agency Technology Portfolios annually, or as needed, to ensure the portfolio accurately reflects current and planned agency technology investments. Procedures for submission of IT Strategic Plan Amendments and for technology portfolio maintenance have been developed and disseminated on the VITA Web site at <http://www.vita.virginia.gov/docs/psg.cfm>.

Plan Publication

VITA will publish copies of the Commonwealth of Virginia Strategic Plan for Technology and Agency IT Strategic Plans on the VITA Website (www.vita.virginia.gov) with instructions for obtaining printed copies.

Section 7: Enterprise Program Management (EPM)

An enterprise is an organization with common or unifying business interests. For the purposes of CTM, an enterprise may be defined at various levels of state government, where business interests are shared and collaboration is appropriate. An enterprise may be defined at the Commonwealth level, the Secretariat level, or agency level for the management of investments requiring either vertical or horizontal integration within the Commonwealth, Secretariat, or agency, or between multiple Secretariats, agencies, and/or localities.

Within the Commonwealth, Enterprise Program Management (EPM) is an ITIM-based methodology to manage investments of enterprise significance. An enterprise technology program refers to a group of related IT investments, aggregated for management purposes that support a defined enterprise.

The PMD, part of VITA Strategic Management Services, serves as the designated Enterprise Program Management Office (EPMO) for the Commonwealth of Virginia and the CIO. In addition to the general functions of EPM, the Commonwealth EPMO also performs specific enterprise program management functions in support of COV enterprise technology programs, the CIO and the ITIB.

General Functions of EPM

EPM integrates the portfolio, program, and project, architecture, and resource management processes to achieve the best business value for the enterprise from IT investments.

IT Portfolio Management

Project Portfolio Management

The ITIM project portfolio management process begins with the selection process wherein projects being proposed for funding are screened, analyzed, and ranked based on established criteria such as project costs, benefits, and risks. Management makes investment decisions on which projects to propose for funding, and which mix of projects will best meet strategic business goals. Once projects have been selected, management controls the execution of projects through periodic reviews of project progress against established cost, schedule, performance, and risk baselines. Monitoring of project progress throughout the project life-cycle allows management to effectively manage and mitigate risks, and to take corrective actions to achieve project success. The last phase of ITIM for projects is the evaluation phase, which closes the loop on the ITIM process. By comparing actual results against planned measures of success, the business value achieved and actual return on the investment is determined. Lessons learned during the evaluation phase provide feedback for future selection and control activities.

Asset Portfolio Management

New or modified assets are added to the technology portfolio upon completion of project implementations and procurements. Through asset portfolio management the assets are managed throughout the life-cycle of the asset. As each asset grows and matures, the utilization and value of the asset is measured and managed to support the expected level of service to the associated business activity in a cost effective manner and with minimal risks. Continuous assessment of the value, the condition of the asset, as well as new technologies available, should be considered when determining whether an asset should be maintained, improved, or replaced. At the end of the useful life of the asset, assets are removed from the portfolio as a result of asset retirement, or replacement. Asset transformation projects, to improve assets or to replace assets to maximize the value delivered to the business activity, are proposed as part of the selection process.

Program Management

EPM provides the management and coordination required to ensure successful execution of enterprise programs and supports program efforts by:

- Facilitating the tactical execution of business and IT strategic plans;
- Expediting decision-making in support of the program;
- Providing management support when exceptional risks or value is involved;
- Making recommendations to incorporate enterprise thinking in technology solutions.

A Program Manager is a person responsible for the management and coordination of a group of related projects. Program Managers are responsible for involving appropriate stakeholders in the delivery of program objectives. Program Managers will provide program status information to the IT governance process, including proponent Secretaries, oversight committees, and affected agencies.

Program Managers should develop and implement an effective risk management program for the identification, monitoring, and mitigation of risks across IT projects. The risk management plan should be used to manage and balance risks across and among IT projects to ensure the successful delivery of the enterprise technology program.

Change management procedures should also be established for each program to effectively plan, manage, and implement changes across the enterprise. An organizational structure should be established to provide timely communications of changes across the program.

Once a program is operational, the responsible agency or Secretariat should conduct periodic program reviews to ensure program objectives are being met. Based upon the periodic assessments, follow-up actions to improve program delivery should be documented and executed.

Program Managers should develop, manage, and maintain an enterprise technology portfolio of designated program resources. The enterprise technology portfolio will reflect IT investments made in support of each enterprise technology program. Program Managers should also establish a means for tracking the value achieved from IT investments. The selected valuation method (such as return on investment, balanced scorecard, etc.) should measure the business value earned by the enterprise technology program.

Project Management

EPM provides the management and integration of multiple IT projects to achieve the desired program result(s). Project management and integration will include: 1) prioritization of IT projects needed to support the program; 2) examination and determination of project dependencies and timing; 3) cost and resource allocation; and 4) change management.

Program Managers provide oversight and coordination of assigned projects; guide and support the development and enhancement of project management capabilities within enterprise program offices and agencies; ensure appropriate project management processes and procedures are in place; and, enforce adherence to established standards and guidelines in the delivery of IT projects.

Project management and execution of individual IT projects, in support of COV Enterprise Technology Programs, will normally be performed by agency Project Managers within participating agencies. Major projects, with enterprise significance, may be managed directly by the EPMO.

Architecture Management

Architecture management is an ongoing process to continually integrate and synchronize appropriate technologies to best serve the business of state government and the citizens of the Commonwealth, while moving to the desired enterprise architecture standards. Program Managers should review technology investments for compliance with established COV Enterprise Architecture standards and maximize opportunities for migration from the current architecture to the desired future architecture. Program Managers should facilitate architecture reviews of designated investments using experienced personnel to identify problems or inconsistencies and feasible alternative solutions. Lessons learned during project execution and architecture reviews should be provided as feedback to the CIO.

Resource Management

A major function of Program Managers is managing resources across programs and IT projects. The three key tasks of resource management are: 1) prioritizing and allocating resources; 2) coordinating resource utilization across investments; and 3) measuring and tracking the expenditure of resources. Clearly defined methods for resource management and reporting of expenditures should be documented and communicated to program constituents.

Specific Functions of the Commonwealth EPMO (VITA PMD)

CIO/ITIB Staff Support

As specified in the *Code of Virginia*, the PMD provides staff support to the ITIB and the CIO in the approval process for IT projects, the approval of agency IT Strategic Plans, and the prioritizing of agency budget requests for information technology. As staff to the ITIB and the CIO, the PMD also serves as the proponent for the implementation of ITIM practices and principles within Commonwealth agencies through the development and promulgation of ITIM-based policies, standards, and guidelines. The PMD monitors the implementation of information management and information technology plans and periodically reports its findings to the CIO.

IT Portfolio Management

The PMD is responsible for managing the Commonwealth Technology Portfolio that serves as a repository for Commonwealth projects and assets to support IT strategic planning and CIO and ITIB reporting requirements. The PMD supports portfolio management processes for the selection, control, and evaluation of projects in the Commonwealth Technology Portfolio as approved by the CIO and the ITIB. The PMD assists the CIO in the development of standards and guidelines to be used by agencies for the maintenance and management of the technology portfolio. The PMD, at the direction of the CIO and the ITIB will establish guidelines for the

regular update of the Commonwealth Technology Portfolio to ensure the portfolio accurately reflects current assets and current and proposed projects. Using Information Technology Infrastructure Library (ITIL) based best practices and process models for IT service management, VITA operational divisions will provide operational/usage measures as well as business/cost information to support IT portfolio management activities.

Commonwealth Program and Project Management

The PMD supports the Commonwealth governance process for the initiation and management of Commonwealth technology programs and projects. Commonwealth technology programs and projects are initiated through the PMD, subject to the recommendation of a Secretariat Oversight Committee, and the CIO, and approved by the ITIB. During program and project execution, program and project progress will be approved by the participating Agency Heads, evaluated by the Program Manager, reviewed by the Proponent Secretariat Oversight Committee, and approved for continuance by the CIO. Closeout of programs will follow the same process of reviews and approvals as program and project initiation.

Project Manager Development Program

The *Code of Virginia* requires the CIO to establish standards for the qualification and training of IT project managers. The Project Manager (PM) Selection and Training Standard establishes the minimum qualifications and training standards for project managers of Commonwealth of Virginia information technology (IT) projects. The PMD manages the qualification program, including PM testing and the PMDP training program. Training partners whose courses meet the knowledge standards and provide a cost effective government or discount rate, required for Commonwealth IT project managers are identified on the Project Manager Development Web site, <http://www.vita.virginia.gov/ittrain/pmdev/pmdev.cfm>.

Oversight of Agency Major IT Projects

The PMD, in conjunction with the proponent Secretaries and Agency Internal Oversight Committees, will perform oversight of Major IT Projects on behalf of the CIO and the ITIB. The PMD will conduct IT project audits and reviews for specific Major IT Projects as directed by the CIO.

Consult on Designated Programs and Projects

At the request of proponent Secretaries or agencies, and with the approval of the CIO, the PMD will consult or assist on designated technology programs and Major IT Projects. Consultation or assistance may be provided to Secretariats or agencies at any point in the program or project life-cycle.

Best Practices Promulgation

The PMD serves as a “best practices” center. The PMD will conduct research to determine “best practices” in technology management in both the public and private sector. “Best practices” will

be promulgated through the issuance of policies, standards, and guidelines as appropriate to technology management within the Commonwealth. A reference library of “best practices” material will be provided on the VITA website (www.vita.virginia.gov).

Proponent for CTM Tools

The PMD serves as the proponent for development and maintenance of supporting tools for the implementation of CTM. Supporting tools will be accompanied by necessary documentation and training. At a minimum, the PMD will serve as functional proponent, the business owner, for the Commonwealth Technology Portfolio, the Commonwealth Agency Strategic Planning Application (CATSPA); and, the Commonwealth Major IT Project Status Report “Dashboard” System.

Secretariat and Agency Enterprise Program Management

The Cabinet Secretaries or Agency Heads may designate Secretariat and agency enterprise technology programs in support of Secretariat or agency initiatives, with the approval of the Commonwealth CIO and the ITIB. Secretariat or agency enterprise technology programs will be defined, funded, developed, approved, and managed at the Secretariat and agency level utilizing guidance established within the CTM policy.

Section 8: Commonwealth Project Management (CPM)

The *Code of Virginia* requires the CIO to develop an approval process for proposed major information technology projects by state agencies to ensure that all such projects conform to the statewide information management plan and the information management plans of agencies and public institutions of higher education. The CIO must also establish a methodology for conceiving, planning, scheduling, and providing appropriate oversight for information technology projects including a process for approving the planning, development and procurement of information technology projects. Commonwealth Project Management documents the CIO established project management methodology to be used by agencies and institutions of higher education.

Commonwealth Project Management is the application of knowledge, skills, tools, and techniques, to meet or exceed stakeholder needs and expectations from a Commonwealth Project. The major concerns of project management are to manage project performance, cost, schedule, and risk over the life of a project in order to achieve anticipated business value. The objective of CPM is to define a structured, disciplined approach for project management in order to deliver anticipated benefits from business-driven IT investments. CPM incorporates industry standards and “best practices” for project management, tailored to meet Commonwealth specific requirements. While CPM supports multiple development methodologies, it provides a common frame of reference for all Commonwealth Project Managers.

The CIO will issue CPM standards and guidelines for technology project management. CPM standards and guidelines will establish comprehensive guidance for Commonwealth project

managers on project initiation, planning, execution, control, and closeout. CPM will also provide standard project management processes, documents, and templates to assist Project Managers in implementing CPM guidance.

Technology projects are expected to be temporary endeavors undertaken to deliver a unique product or service. Technology projects of long duration, more than twelve months, will be executed in phases with incremental objectives and measures of success, such that continued funding can be allocated based on achievement of prior phase objectives.

There are two categories of technology projects in the Commonwealth:

1. Major IT Project - In the Commonwealth of Virginia, Major IT Projects are information technology projects that are mission critical; have statewide application; or, have a total estimated cost of more than \$1 million. The CTM life-cycle for Major IT Projects is described in Appendix E.
2. Non-major IT Project - In the Commonwealth of Virginia, Non-major IT Projects are those technology projects with a total estimated cost less than or equal to \$1 million; that are not mission critical or do not have statewide application. The CTM life-cycle for Non-major IT Projects with a total cost of over \$100,000 is described in Appendix F.

A technology project may represent a sub-project of some other type of project, for example a building construction, business process re-engineering or transportation system project. If the larger project includes a technology component or information system as a required deliverable within the project, the technology portion of the project should be managed as a technology project and is subject to all policies, standards, and guidelines governing the management of Commonwealth technology projects.

Specific requirements for both planning and development approval of Major IT Projects are mandated in the *Code of Virginia*. All Commonwealth Major IT Projects must receive “approval for planning” from the CIO and “approval for development” from the ITIB based upon recommendation of the CIO.

Agencies have authority for planning and development of Non-major IT projects with a total cost of less than \$100,000. Non-major projects with a total cost of over \$100,000 must have the approval of the CIO for planning and development, unless specific delegated authority is granted by the CIO to an agency or institution of higher education for such projects. Institutions of higher education which are members of the Virginia Association of State Colleges and University Purchasing Professionals (VASCUPP) as of July 1, 2003, are delegated authority by the CIO for planning and development of Non-major IT Projects from \$100,000 to \$1 million. Delegated authority for planning and development of Non-major IT Projects applies only to Non-major IT Projects and does not preclude the requirement that the CIO review and approve any RFP in support of a Major IT Project. (See *Procurements in Support of Major IT Projects*.)

An agency is responsible for the management of any IT project initiated for their agency. All Commonwealth Major IT Projects must have a designated Project Sponsor. The Project Sponsor

should be an individual, usually part of the organization management team, who makes the business case for the project. This individual should also have the authority to define project goals, secure resources, approve project budgets and expenditures, and resolve organizational and priority conflicts.

Every Commonwealth IT project must have a designated Project Manager. The Project Manager for a Major IT Project will be appointed and qualified by the Project Sponsor and approved by the CIO. For Non-major IT projects, the Project Sponsor will qualify and approve the Project Manager. The Project Manager will be responsible for the management of the project from project initiation to closeout. The Project Manager for a Major IT Project must be an employee of the Commonwealth or a consultant directly contracted for that purpose and supervised by the agency. Project Managers for Major IT Projects are responsible for project reporting to the CIO via the oversight process set out below.

The *Code of Virginia* requires the CIO to establish standards for the qualification and training of IT project managers. The Project Manager Development Program endeavors to satisfy the requirements of the *Code of Virginia* through its five components: PM Testing and Training; PM Qualifications; PM Mentoring; a Qualification and Selection Process; and, the PM Qualification and Selection Process Implementation Schedule, through which Commonwealth of Virginia IT project managers are qualified for specific projects within established project categories. To be qualified to manage a specific project, the project manager candidate must meet the qualification requirements for the project category and have the appropriate training or experience necessary for the specific project as specified in the Project Manager (PM) Selection and Training Standard.

Agencies are required to follow CPM standards and are encouraged to utilize CPM guidelines for the management of all IT projects within the Commonwealth. For Non-major IT projects, the application of project management standards and guidelines and the level of project management should be tailored to the size and importance of the project.

Major IT Project Oversight

Major IT Projects will be subject to periodic review by the CIO. For Major IT Projects, the CIO is required by the *Code of Virginia* to establish internal agency oversight committees, multi-agency oversight committees for statewide applications projects, and oversight structures for addressing issues that cannot be resolved by internal agency oversight committees. Major IT Project oversight committee structure and designated committee members will be identified in the project charter. Standing Proponent Secretariat Oversight Committees will normally address issues that cannot be resolved by Internal Agency Oversight Committees.

Internal Agency Oversight Committees provide ongoing oversight for an agency project and have the authority to approve or reject changes to the project scope, cost, schedule, and performance measures, which are collectively referred to as the project baseline. A representative from the PMD will participate in the Major IT Project Internal Agency Oversight Committee in order to provide ongoing assistance and support to state agencies and public

institutions of higher education in the development of information technology projects, as specified in the *Code of Virginia*.

For statewide or multi-agency projects, the CIO will appoint the members of oversight committees in consultation with the lead agency and Proponent Secretary. The appointed members of statewide or multi-agency project oversight committees are typically employees of the agencies affected by the project and include a representative from the PMD. Multi-agency committees provide ongoing oversight for a statewide or multi-agency project and have the authority to approve or reject changes to the project baseline.

Once initiated, a Major IT Project must be entered into the Commonwealth Major IT Project Status Report "Dashboard" System. The "Dashboard" provides a common framework for agency, Secretariat, and oversight committee review and assessment of all Commonwealth Major IT Projects. The CIO will resolve, in consultation with the Proponent Secretaries, any issues that cannot be resolved by the Agency Internal Oversight Committees. The Commonwealth Major IT Project Status Report Dashboard is the tool used to notify the Proponent Secretaries and CIO of issues that require resolution at their level. Project baseline changes, approved by Agency Internal Oversight Committees, for Major IT Projects will be reported to the Proponent Secretariat Oversight Committee and CIO through the Dashboard system.

Based on project oversight reviews or agency approved baseline changes, the Proponent Secretariat Oversight Committee may provide the CIO with recommendations regarding project continuance or termination, baselines, management plan, (next) periodic review, and any follow-up actions required. The CIO will issue a formal, written approval or rejection of Proponent Secretariat Oversight Committee recommendations. Approvals may be issued contingent upon the proponent agency addressing specific recommendations from the Proponent Secretariat Oversight Committee. Approvals will also include the date for the next periodic review of the project by the Proponent Secretariat Oversight Committee. Based on recommendations from the Proponent Secretariat Oversight Committee, the CIO will issue a written decision to direct necessary modifications to insure the success of a project, or will recommend to the ITIB to terminate the project.

As a supplement to regular project review and oversight, project managers for all Major IT Projects must implement an independent verification and validation (IV&V) strategy. IV&V should be performed by an organization that is technically, managerially, and financially independent of the development organization. The IV & V strategy for Major IT Projects will be reviewed and approved as part of the Major IT Project oversight process. IV & V of Non-Major IT Projects is encouraged.

As specified in the *Code of Virginia*, research projects, research initiatives, or instructional programs at public institutions of higher education estimated to cost more than \$1 million of general fund appropriations may be subject to periodic review by the CIO if the projects are deemed mission-critical by the institution or of statewide application by the CIO. Criteria for determining whether such projects are mission-critical shall be developed by the CIO and Secretary of Education in consultation with public institutions of higher education. Consistent

with the *Code of Virginia*, the oversight process will not supersede the responsibility of a board of visitors for the management and operations of an institution of higher education.

Procurements in Support of Major IT Projects

When a Request for Proposal (RFP) or Invitation for Bid (IFB) is used to procure goods or services for an approved Major IT Project, the agency is required to submit a copy of the RFP or IFB to the PMD. A PMD project management specialist will review the RFP or IFB and recommend its approval or rejection to the CIO. The project management specialist may require additional documentation from the agency. The CIO is the final authority for approval of an RFP or IFB for release and has final approval authority for the proposed contract before the contract is awarded.

As required by the *Code of Virginia*, as part of the project initiation process, agencies must identify to the PMD all projects involving a contract, agreement or financing arrangement that requires that the Commonwealth either pay for the contract by foregoing revenue collections, or allows or assigns to another party the collection on behalf of or for the Commonwealth any fees, charges, or other assessment or revenues to pay for the project. Identified projects will be required to comply with additional reporting requirements to the Department of Planning and Budget.

Project Life-cycle Processes

Project Selection

Agencies are asked to identify planned projects, including telecommunications projects, as part of the Agency IT Strategic Plan. All proposed or continuing projects with expenditures planned, regardless of funding source, should be identified in the Agency IT Strategic Plan. Criteria for the evaluation and approval or “selection” of projects, with a focus on Major IT Projects are specified in the *Code of Virginia* to include:

- Degree to which the project is consistent with the Commonwealth's overall strategic plan;
- Technical feasibility of the project;
- Benefits to the Commonwealth of the project, including customer service improvements;
- Risks associated with the project;
- Continued funding requirements;
- Past performance by the agency on other projects.

Approval by the CIO of the Agency IT Strategic Plan constitutes selection approval allowing agencies to proceed with project initiation. Approval of the project, as reflected in the Agency IT Strategic Plan, also satisfies the legislative requirement for “project planning approval” by the CIO. Approved agency IT strategic plans define an agency’s technology project portfolio.

Project Initiation

IT projects selected for inclusion as part of the approved agency IT Strategic Plan must go through a formal initiation process prior to proceeding with detailed project planning and subsequent execution. Agencies seeking to initiate detailed project planning and subsequent execution are required to submit a project proposal outlining the business need for the project, the proposed technology solution, if known, and an explanation of how the project would support the agency's business objectives and the Commonwealth's information technology plan. The project proposal is meant to ensure that the implementing organization has a clear understanding of the objectives and scope of the project and that the project is a sound solution to a business need or issue.

The project proposal will provide the basis for a project charter authorizing the allocation of resources for initiation of the project. Agencies seeking to initiate detailed project planning and subsequent execution of an IT project are required to submit a project charter along with their project proposal. Approval of the project charter represents the official initiation of the project and beginning of the project-planning phase. The approval of the project proposal and charter also satisfies the legislative requirement within the *Code of Virginia* for “project development approval” by the ITIB. Project development approval includes approval for an agency to proceed with the planning and execution phases of the CTM life-cycle. Once a Major IT Project is approved, the project will be established as an active project on the Commonwealth Major IT Project Status Report Dashboard. Project proposals, charters, and Dashboard status reports should be submitted in the format prescribed in the Commonwealth Project Management standards and guidelines available on the Commonwealth Project Management Website (<http://www.vita.virginia.gov/projects/cpm/index.cfm>).

Project Planning

A project plan must be developed for all Major IT Projects. The CIO, upon recommendation of the Internal Agency Oversight Committee, must approve project plans including project cost, schedule, and performance baselines for Major IT Projects. The Agency Head or Project Sponsor should approve project plans for Non-major IT Projects. The project plan will be revised as needed to reflect changes approved by the agency project management organization and Internal Agency Oversight Committee in accordance with the Commonwealth Project Management Standard.

Project Execution and Control

Project execution should be in accordance with the approved project plan. Specific metrics will be established to measure progress against project baselines. Measures of success will be business-driven and measured incrementally through the life of the project.

Project Managers and Project Sponsors of Major IT Projects are responsible for tracking and measuring project progress against the approved project plan. As required by the *Code of Virginia*, an Agency Internal Oversight Committee must be established to conduct regular reviews of Major IT project execution to ensure the project is on track to achieve targeted

measures of success. Project Managers must report the status of Major IT Projects for review by the Agency Head, the proponent Secretary, and the CIO via the Commonwealth IT Project Status Report “Dashboard”, according to the reporting schedule established by the CIO. Major IT Project oversight and project reporting should be performed as prescribed in the Commonwealth Project Management standards and guidelines available on the Commonwealth Project Management Website (<http://www.vita.virginia.gov/projects/cpm/index.cfm>).

The Project Sponsor and Project Manager of Non-major IT Projects are responsible for tracking and measuring project progress against the approved project plan. For Non-major IT Projects, the Agency Head or established agency oversight organization should conduct regular reviews of the project execution to ensure the project is on track to achieve targeted measures of success.

Project Closeout

All Major IT Projects must complete a formal project closeout. All Non-major IT Projects should complete a formal project closeout. The purpose of the project closeout is to:

- Perform a final administrative review to account for resources and expenditures;
- Perform a final project review to assess the actual versus planned results;
- Document formal acceptance of project deliverables;
- Identify lessons learned for feedback into the Commonwealth project management process;
- Establish the schedule and responsibility for the post implementation review.

For all Major IT Projects, a final project status report will be entered into the “Dashboard” by the Project Manager and approved by the CIO, upon recommendation of the Agency Internal Oversight Committee. Project closeout documents for Non-major IT Projects should be approved by the Project Sponsor and maintained by the agency.

On an annual basis, agencies must report to the CIO and the Director of Planning and Budget on performance measurement information for technology projects. The information shall include, but not be limited to, the degree to which projects were completed on time and within budget. The performance reporting will be based on guidance issued by the CIO and the Department of Planning and Budget.

Project Operations and Support

Once a project is completed, the product or service is transferred to the operational unit of the organization where it is then supported, managed and maintained. After the product or service has become operational for a sufficient period of time (typically six to 12 months), a Post Implementation Review (PIR) should be performed to evaluate whether the product or service is delivering the expected results. The actual project costs and benefits should be measured against the project plan. A determination should be made regarding continued operation of the system and whether modifications or enhancements are needed to improve the operation of the system. If system changes are necessary, management must decide which actions must be taken to

achieve the desired return on the IT investment. The PIR should also document the successes and failures of both the investment decision and project management processes.

A PIR must be performed for all Major IT Projects, normally twelve months after project closeout. The agency will conduct a formal post implementation review. A Post Implementation Report will be submitted by the agency to the PMD, documenting the successes and failures of the project and any approved follow-up actions. Lessons learned from the PIR process will be reviewed by the PMD of VITA and disseminated as appropriate. For Non-Major IT Projects, agencies and Secretariats are encouraged to utilize the PIR process.

Section 9: Commonwealth Asset Management (CAM)

Commonwealth Asset Management is a disciplined process based on industry standards and best practices, like ITIM and IT Infrastructure Library (ITIL), for the management of information technology assets. CAM is defined as the process of planning, procuring, deploying, operating, maintaining, upgrading and disposing of information technology assets to achieve maximum return on investment over the life-cycle of the asset, in support of both the Commonwealth and agency IT strategic plans. An asset is a component of a business process and can include computer rooms, networks, digital and paper records, hardware, software, people, etc.

The major objectives of CAM include:

- Optimizing utilization of all technology assets;
- Lowering operating costs;
- Maximizing asset availability for service delivery;
- Improving IT risk management;
- Improving productivity for service support;
- Improving organizational agility;
- Maximizing asset useful life;
- Improving the ability to monitor and manage change;
- Improving the ability to plan and budget for asset replacement;
- Ensuring financial records reflect the true picture of assets in the Commonwealth.

CAM includes both the collection of inventory information about IT assets and the analysis of this information to facilitate strategic planning, financial planning and accounting, procurement, help desk service delivery and customer support, and risk management planning and training. VITA, under the direction of the CIO and as owner of infrastructure assets, will build and maintain a detailed inventory of Commonwealth technology infrastructure assets. Agencies, under the direction of the CIO and as owners of application assets, will build and maintain a detailed inventory of agency technology application assets. In collaboration with VITA, agencies will manage their asset portfolio throughout the lifecycle of the assets. Agency human resource asset management will follow the established *Code of Virginia* and DHRM policies and procedures.

Commonwealth Asset Portfolio

A Commonwealth Asset Portfolio will be established and maintained as part of the Agency IT Strategic Planning Process. The Asset Portfolio will identify all technology assets in the Commonwealth and will serve as the centralized repository for asset information. For technology assets owned by agencies, which are not transferred to VITA, agencies will maintain their individual asset information in the Commonwealth Technology Portfolio as part of the routine process of updating their Agency IT Strategic Plan (ITSP).

Commonwealth Asset Manager

The business owner and manager of the Commonwealth Asset Portfolio is the CIO. The CIO will issue standards and guidelines, which will establish a comprehensive framework for agency participation in CAM. VITA will serve as the CAM executive agent for the CIO to insure consistent implementation of asset management processes and procedures. The Commonwealth Strategic Plan for Technology, the Commonwealth enterprise architecture (standards), and centralized technology procurement through VITA will support the achievement of CAM objectives.

Commonwealth Asset Life-cycle

Asset Planning

Asset planning is a structured approach to determine the right mix of assets required within the asset portfolio to meet established service level agreements in a cost-effective manner while minimizing risk to service delivery. In the Commonwealth of Virginia, asset planning is conducted via the Agency IT Strategic Planning process, which builds the Commonwealth Technology Portfolio.

The Commonwealth Technology Portfolio is a repository for agency IT investments, both projects and assets. The portfolio captures the “As Is” view of an agency’s IT architecture and facilitates the identification of and migration to the “To Be” IT architecture. The identification of and migration to the “To Be” architecture begins with a comprehensive analysis of the current Commonwealth Technology Portfolio (“As Is” IT architecture), and an evaluation of the ability of the current technology portfolio to meet the business needs of the agency. The evaluation typically takes the form of a gap analysis of the “As Is” to the “To Be” state and results in the identification of projects and procurements necessary to move the organization to the “To Be” state. The gap analysis compares the proposed technology environment with the actual technology environment to ensure that assets are selected and deployed to meet the business needs of the agency.

Upon completion of a gap analysis, appropriate standardization and optimization actions and recommendations for assets are submitted as part of the Agency IT Strategic Plan. Asset transformation projects and procurements are identified in the Agency ITSP for the approval of the CIO.

While the asset planning process begins with preparation of the Agency ITSP, agencies must continuously manage and evaluate their technology portfolio through industry standards and best practices like ITIL. This assures that the "As Is" inventory of assets and planned asset deployments stay continuously aligned with the business needs of the agency and the Commonwealth.

Asset Procurement

Assets may be individually procured or developed as a product of a project implementation. As specified in the *Code of Virginia*, VITA will be responsible for all technology procurements unless otherwise delegated by the CIO. Assets must be procured in accordance with the established Commonwealth and VITA procurement standards.

Requirements for asset procurements should be carefully crafted to ensure the resulting purchase meets the required business need, while supporting the Commonwealth Strategic Plan for Technology and enterprise architecture. Likewise, assets deployed as the result of a project implementation must also adhere to the Commonwealth Strategic Plan for Technology and support both architecture standards and business strategy.

Asset Deployment

The asset deployment phase of the CAM life-cycle includes activities to receive, reconcile, and deploy assets within the Commonwealth, following industry standards and best practices to protect the investment. As new assets are deployed, information should be shared across the agency in a timely manner to insure the asset, service and financial systems are properly updated in order to manage the asset investment. Agencies must ensure that technology asset deployment strategies are implemented as planned in support of overall business strategy.

Asset information should be collected and recorded in the Agency Asset Portfolio in a timely manner. Standard processes based upon industry best practices like ITIL will be used to track the deployment of new assets.

Asset Operations and Maintenance

The agency will establish industry standards and best practices (i.e. ITIL) for service delivery, and service support processes and procedures to properly operate, maintain, and manage assets. Operations and maintenance includes change management procedures to track asset lifecycle activity through the service support process, to provide service status and reporting, and maintain a complete history of asset changes.

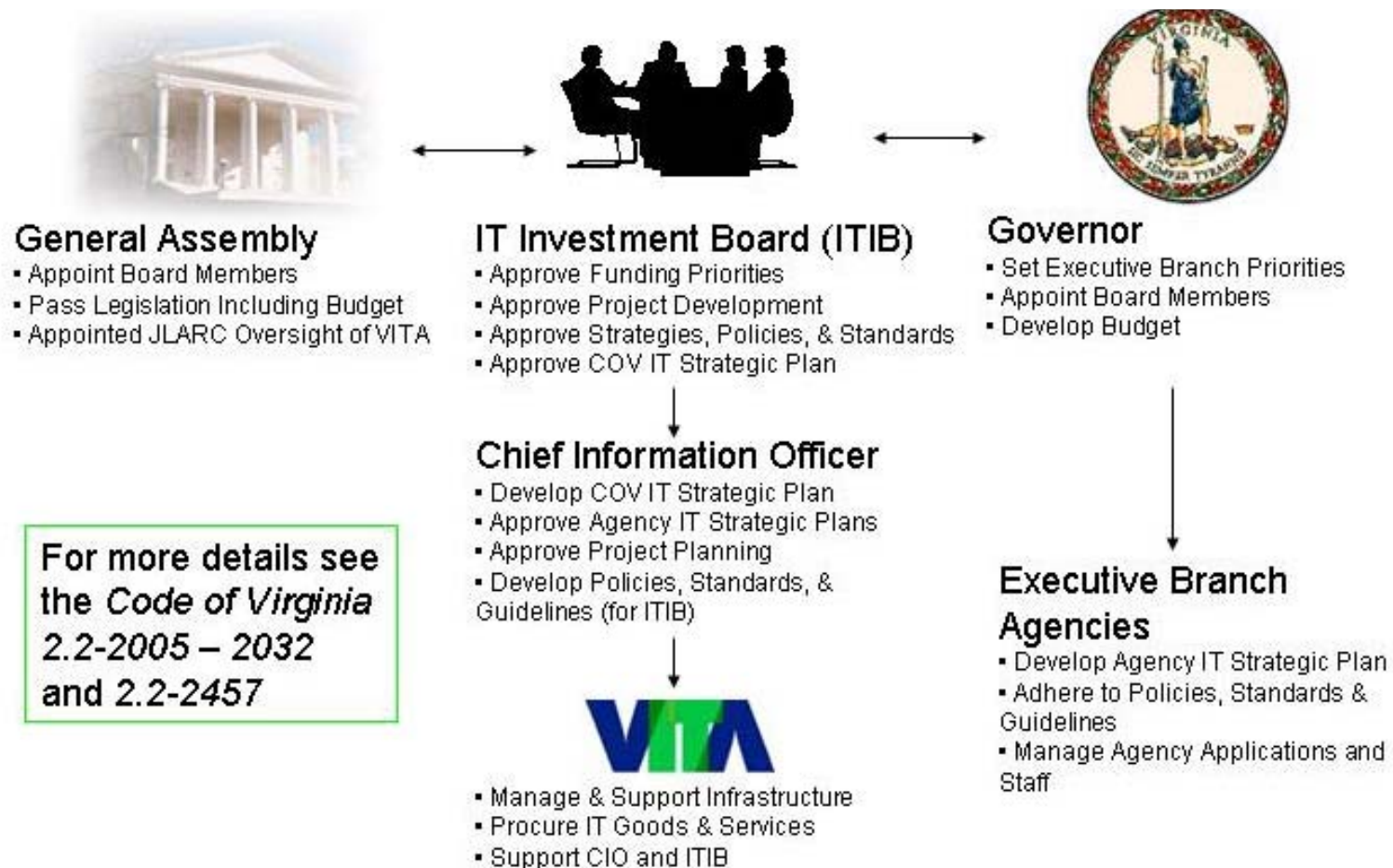
Asset Retirement

VITA will develop standards and procedures for rehabilitation and disposition of technology assets in accordance with the COV Agency Procurement and Surplus Property Manual. Asset retirement standards will take into consideration advancement of the Commonwealth enterprise architecture, contract renewals, life-cycle stage, emerging and new technologies, and cost and

value considerations. Procedures for asset retirement will be established to insure proper security is implemented, including data removal and cleansing as defined by the Commonwealth of Virginia. Standard for Removal of Commonwealth Data from Surplus Computer Hard Drives and Electronic Media Standard (SEC2003-02.1)...

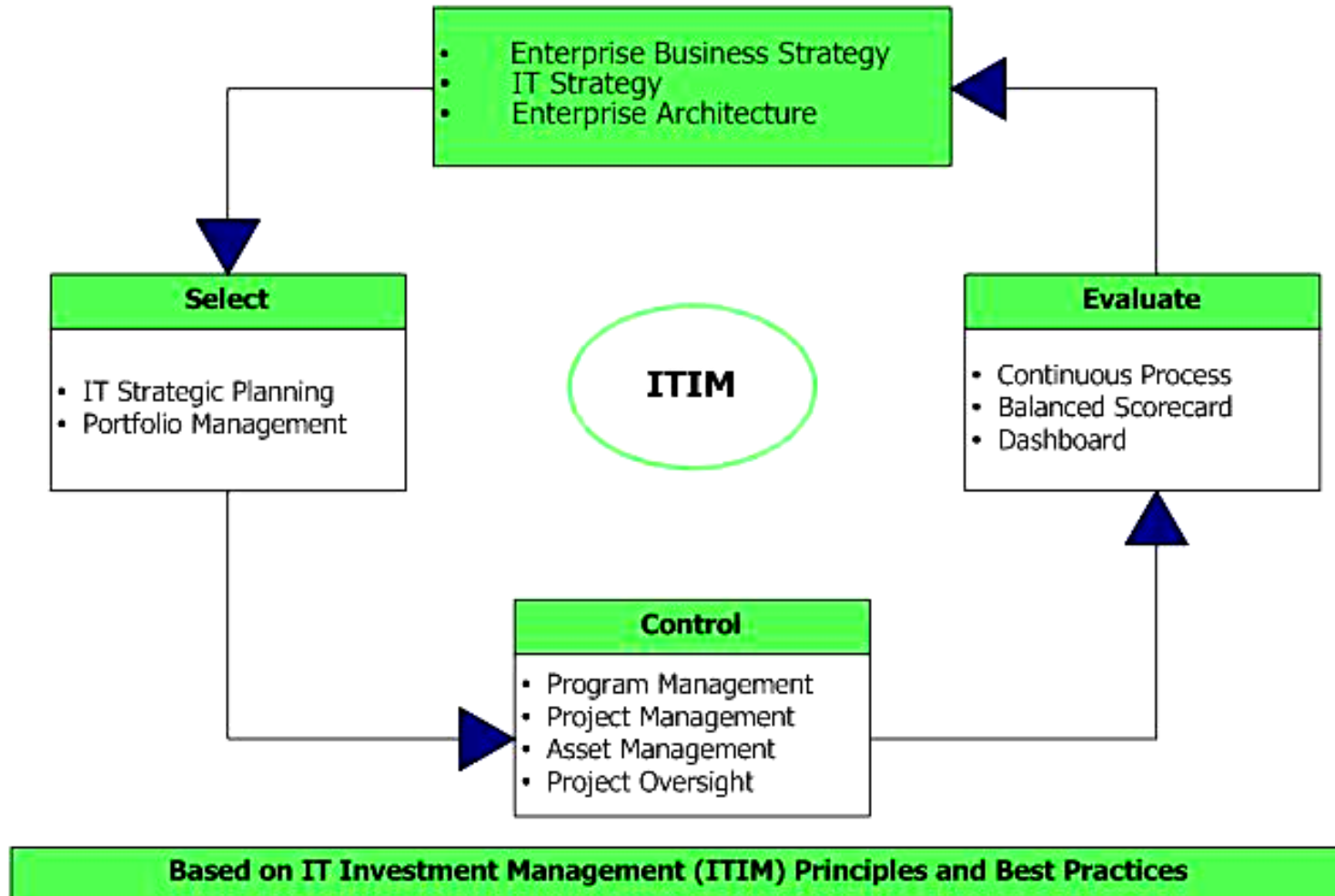
Appendix A: CTM Governance Structure

The following chart documents the graphical view of the CTM Governance as established in the *Code of Virginia*.



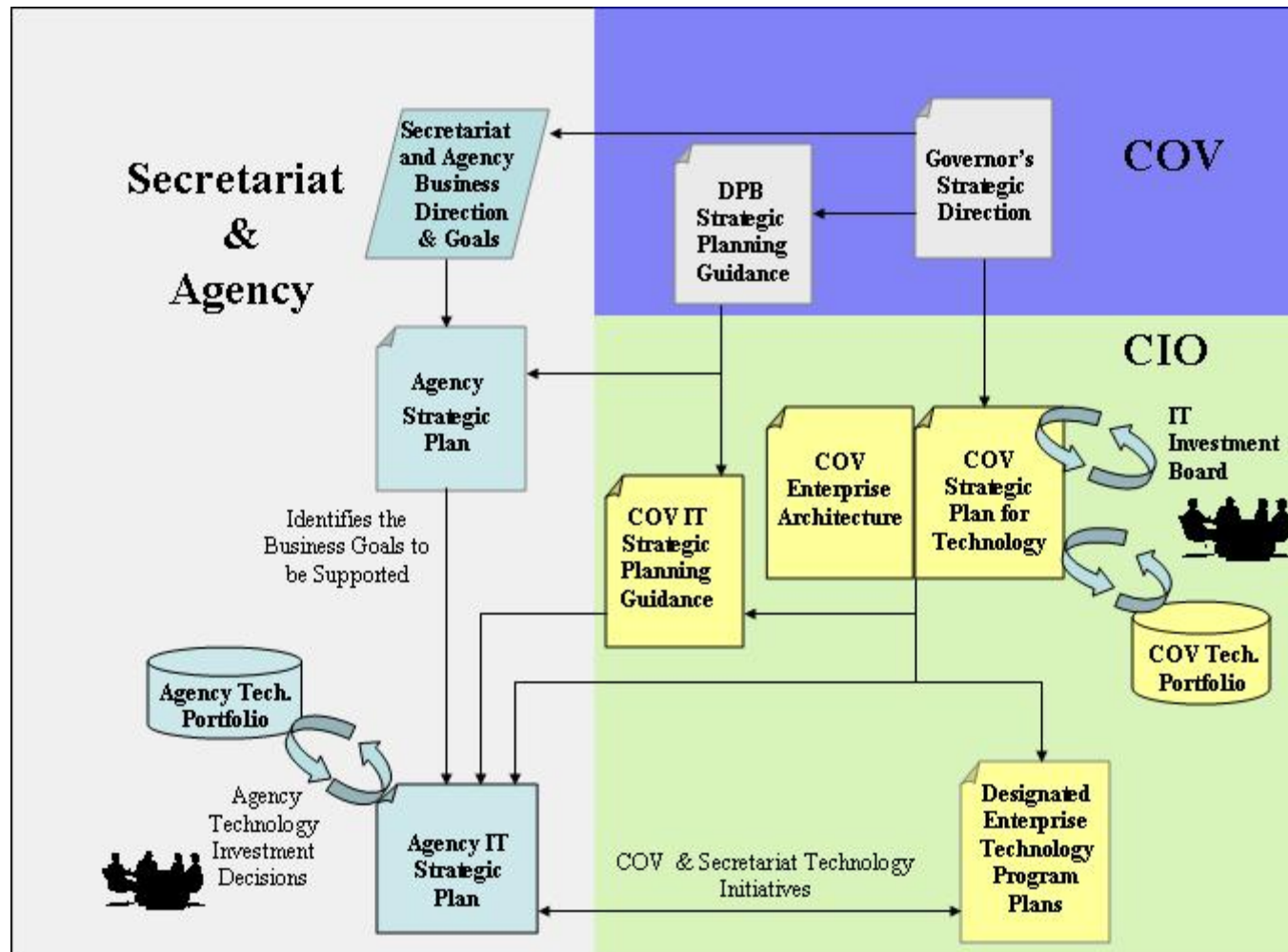
Appendix B: CTM Integrated ITIM

The following chart documents the ITIM framework and supporting processes for the selection, control, and evaluation of Commonwealth IT investments.



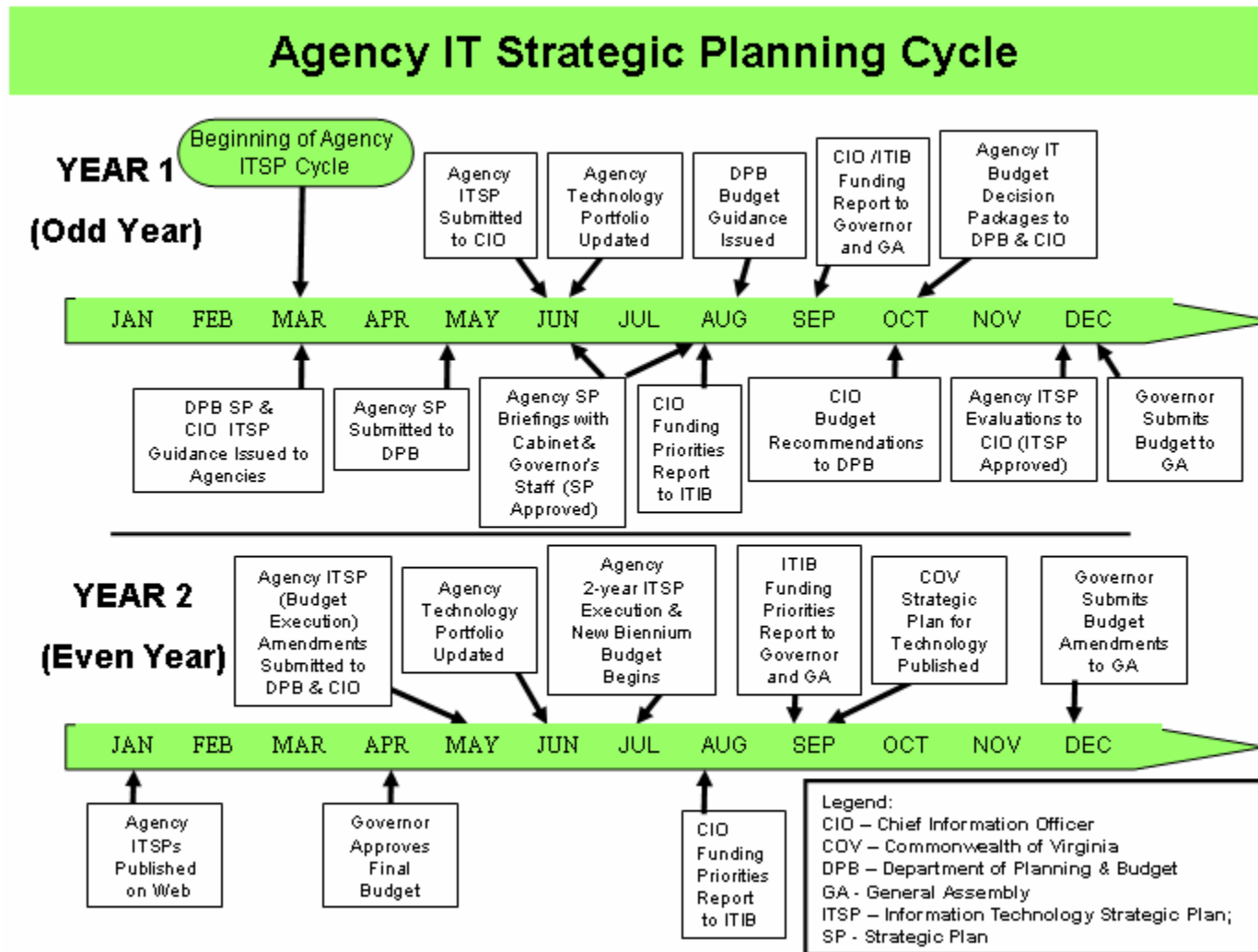
Appendix C: CTM IT Strategic Planning Process

The following chart documents the CTM IT Strategic Planning process.



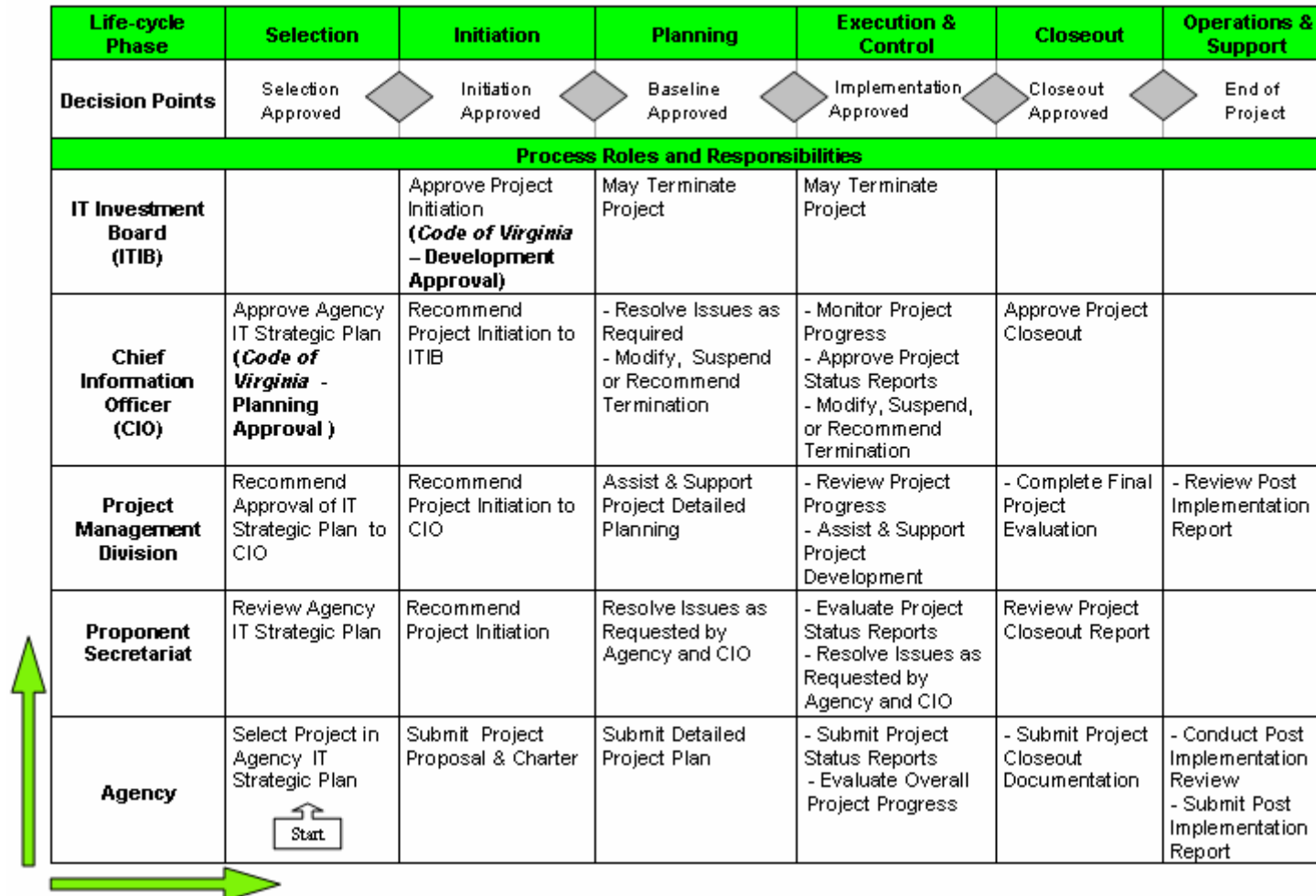
Appendix D: CTM Agency IT Strategic Planning Cycle

The following chart documents the general schedule of activities for the IT strategic planning cycle. Specific dates for each activity will be determined by the Governor's and the General Assembly's schedules for biennium strategic planning and budget submissions.



Appendix E: CTM Life-cycle – Major IT Project

The following chart documents the life-cycle phases for Major IT Projects, associated decision points, and management team responsibilities during each phase.



Appendix F: CTM Life-cycle – Non-major IT Projects with a Total Estimated Cost Greater from \$100,000 to \$1 million

The following chart documents the life-cycle phases for Non-major IT Projects, associated decision points and management team responsibilities during each phase.

